

1. An electronically updatable external labeling system for a data storage element,  
comprising:

an external surface of said data storage element;

an electronic persistent visual display at said external surface, for providing a visual  
5 display;

an input for providing a signal for updating said visual display of said electronic  
persistent visual display; and

an update agent for operating said electronic persistent visual display in accordance with  
said signal of said input to update said visual display, such that said visual display comprises an  
10 updated persistent visual display label.

2. The electronically updatable external labeling system of Claim 1, additionally  
comprising:

a nonvolatile electronic memory provided at said data storage element, for storing  
information related to said visual display; and

15 a memory input for providing a signal for altering said information of said nonvolatile  
electronic memory, updating said information, such that said electronic persistent visual display  
and said information both are electronically updatable.

3. The electronically updatable external labeling system of Claim 2, additionally comprising a refresh control for sensing said nonvolatile electronic memory, and providing a refresh signal related to said sensed nonvolatile electronic memory, for refreshing said visual display of said electronic persistent visual display; and operating said update agent for updating said visual  
5 display of said electronic persistent visual display in accordance with said refresh signal of said refresh control.

4. The electronically updatable external labeling system of Claim 1, wherein said visual display of said electronic persistent visual display comprises a human readable visual display.

5. The electronically updatable external labeling system of Claim 1, wherein said visual  
10 display of said electronic persistent visual display comprises a machine readable visual display.

6. The electronically updatable external labeling system of Claim 1, wherein said visual display of said electronic persistent visual display comprises a combined human readable visual display and a machine readable visual display.

7. The electronically updatable external labeling system of Claim 1, wherein said update  
15 agent comprises a power source for operating said electronic persistent visual display to update said visual display

8. The electronically updatable external labeling system of Claim 1, additionally comprising a security control selectively providing a security signal; and operating said update agent to convert said human readable visual display of said electronic persistent visual display to a blank  
5 in response to said security signal.

9. A data storage cartridge, comprising:

a cartridge shell, capable of supporting at least one data storage media;

an electronic persistent visual display supported at said cartridge shell, for providing a visual display;

5 an input for providing a signal for updating said visual display of said electronic persistent visual display; and

an update agent for operating said electronic persistent visual display in accordance with said signal of said input to update said visual display, such that said visual display comprises an updated persistent visual display label.

10 10. The data storage cartridge of Claim 9, additionally comprising:

a nonvolatile electronic memory for storing information related to said visual display; and

a memory input for providing a signal for altering said information of said nonvolatile electronic memory, updating said information, such that said electronic persistent visual display and said information both are electronically updatable.

11. The data storage cartridge of Claim 10, additionally comprising a refresh control for sensing said nonvolatile electronic memory, and providing a refresh signal related to said sensed nonvolatile electronic memory, for refreshing said visual display of said electronic persistent visual display; and operating said update agent for updating said visual display of said electronic  
5 persistent visual display in accordance with said refresh signal of said refresh control.

12. The data storage cartridge of Claim 9, wherein said visual display of said electronic persistent visual display comprises a human readable visual display.

13. The data storage cartridge of Claim 9, wherein said visual display of said electronic persistent visual display comprises a machine readable visual display.

10 14. The data storage cartridge of Claim 9, wherein said visual display of said electronic persistent visual display comprises a combined human readable visual display and a machine readable visual display.

15. The data storage cartridge of Claim 9, wherein said update agent comprises a power source for operating said electronic persistent visual display to update said visual display.

16. The data storage cartridge of Claim 9, additionally comprising a security control selectively providing a security signal; and operating said update agent to convert said human readable visual display of said electronic persistent visual display to a blank in response to said security signal.

17. A magnetic tape data storage cartridge, comprising:

a cartridge;

a magnetic tape data storage media supported by said cartridge;

an electronic persistent visual display supported at said cartridge, for providing a visual

5 display;

an input for providing a signal for updating said visual display of said electronic

persistent visual display; and

an update agent for operating said electronic persistent visual display in accordance with

said signal of said input to update said visual display, such that said visual display comprises an

10 updated persistent visual display label.

18. The magnetic tape data storage cartridge of Claim 17, additionally comprising:

a nonvolatile electronic memory for storing information related to said visual display; and

a memory input for providing a signal for altering said information of said nonvolatile

electronic memory, updating said information, such that said electronic persistent visual display

15 and said information both are electronically updatable.

19. The magnetic tape data storage cartridge of Claim 18, additionally comprising a refresh control for sensing said nonvolatile electronic memory, and providing a refresh signal related to said sensed nonvolatile electronic memory, for refreshing said visual display of said electronic persistent visual display; and operating said update agent for updating said visual display of said  
5 electronic persistent visual display in accordance with said refresh signal of said refresh control.

20. The magnetic tape data storage cartridge of Claim 17, wherein said visual display of said electronic persistent visual display comprises a human readable visual display.

21. The magnetic tape data storage cartridge of Claim 17, wherein said visual display of said electronic persistent visual display comprises a machine readable visual display.

10 22. The magnetic tape data storage cartridge of Claim 17, wherein said visual display of said electronic persistent visual display comprises a combined human readable visual display and a machine readable visual display.

23. The magnetic tape data storage cartridge of Claim 17, wherein said update agent comprises a power source for operating said electronic persistent visual display to update said  
15 visual display.



24. The magnetic tape data storage cartridge of Claim 17, additionally comprising a security control selectively providing a security signal; and operating said update agent to convert said human readable visual display of said electronic persistent visual display to a blank in response to said security signal.

25. An automated data storage library, comprising:

a plurality of storage shelves for storing data storage cartridges;

at least one data storage drive for reading and/or writing data with respect to said data storage cartridges;

5 at least one robot accessor for transporting said data storage cartridges between said plurality of storage shelves and said at least one data storage drive;

an electronic persistent visual display positioned at said automated data storage library, for providing a visual display;

an input for providing a signal for updating said visual display of said electronic

10 persistent visual display; and

an update agent for operating said visual display of said electronic persistent visual display in accordance with said signal of said input to update said visual display, such that said visual display comprises an updated persistent visual display label.

26. The automated data storage library of Claim 25, wherein said electronic persistent visual

15 display is positioned at said automated data storage library so as to be visible externally of said

automated data storage library, and said visual display of said electronic persistent visual display comprises a human readable visual display.

27. The automated data storage library of Claim 25, wherein said electronic persistent visual display is positioned in the vicinity of a component of said automated data storage library, said component comprising at least one of said plurality of storage shelves, and/or said at least one data storage drive and/or said at least one robot accessor; said visual display of said electronic  
5 persistent visual display comprises a machine readable visual display and/or a human readable visual display.

28. An automated data storage library, comprising:

a plurality of storage shelves for storing data storage cartridges;

at least one update station for interfacing with at least one of said data storage cartridges;

at least one robot accessor for transporting said data storage cartridges between said

5 plurality of storage shelves and at least one data storage drive, said at least one data storage drive

for reading and/or writing data with respect to said data storage cartridges, said at least one robot

accessor to interface at least one said accessed cartridge with said at least one update station; and

at least one processor for operating said robot accessor to access at least one of said data

storage cartridges from said storage shelves and/or said at least one data storage drive, and to

10 interface said accessed at least one of said data storage cartridges with said at least one update

station; and for operating said at least one update station to provide an update signal for updating

an electronic persistent visual display of said accessed at least one of said data storage cartridges.

29. The automated data storage library of Claim 28, wherein said update station is provided at said robot accessor.

15 30. The automated data storage library of Claim 28, wherein said library comprises at least one said data storage drive, and said update station is provided at said data storage drive.